

Title of Invention: High Contrast Surface
Marking Using Irradiation of Electro-
Statically Applied Marking Materials
Inventor's Name: Harrison, Paul
Serial No: 09/880,391

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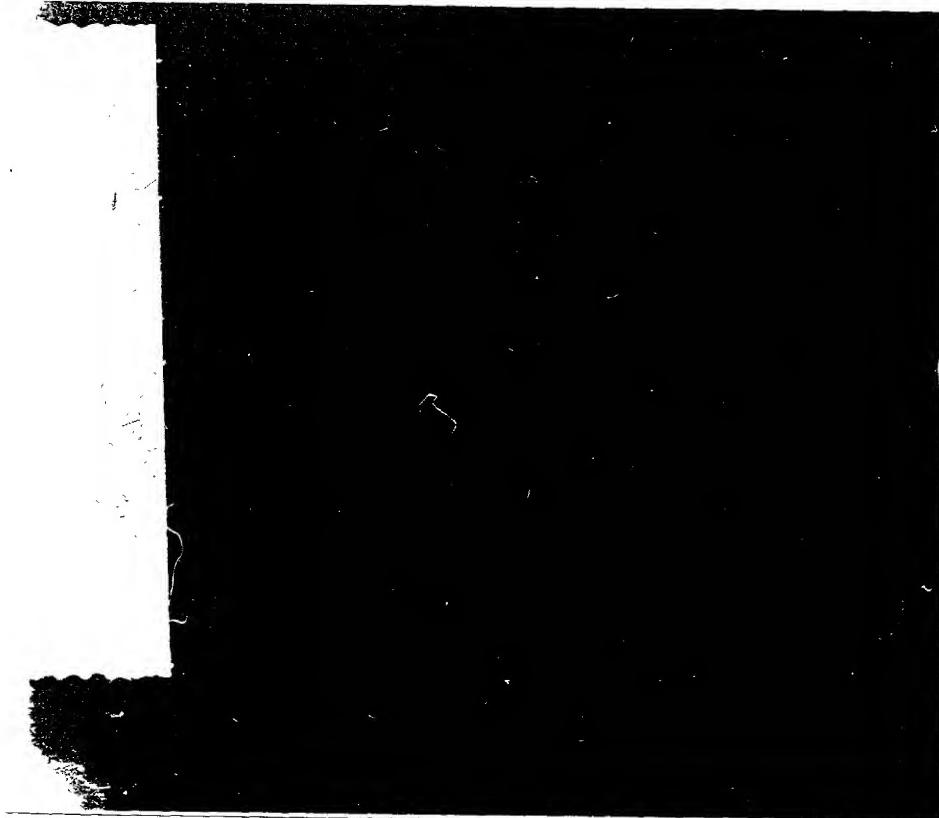


FIG. 1



FIG. 2

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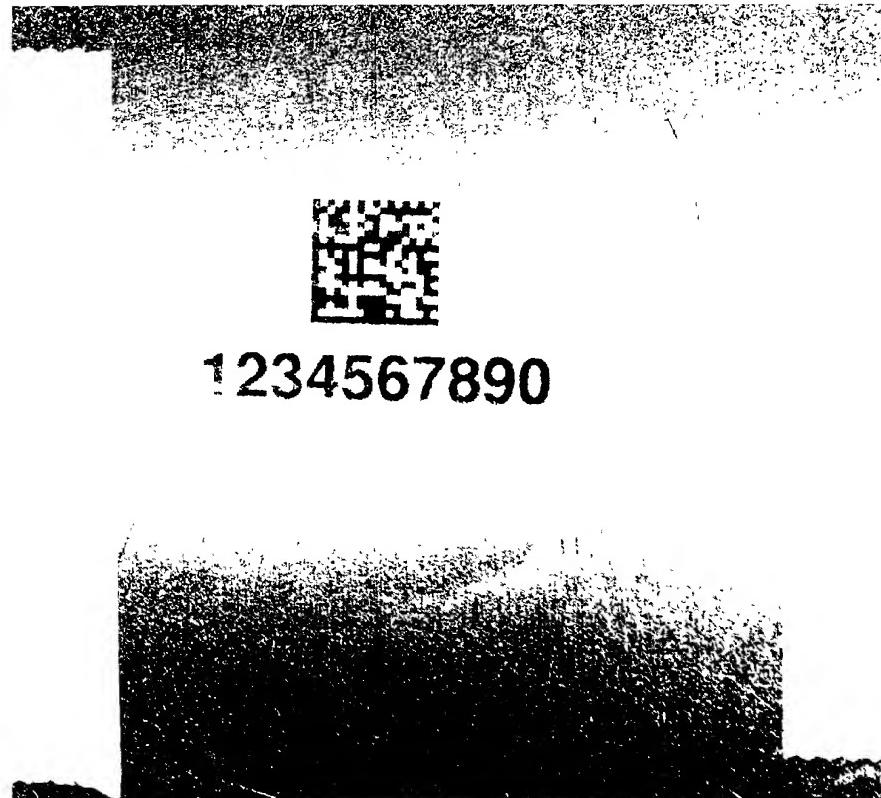


FIG. 3



FIG. 4

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FIG. 5

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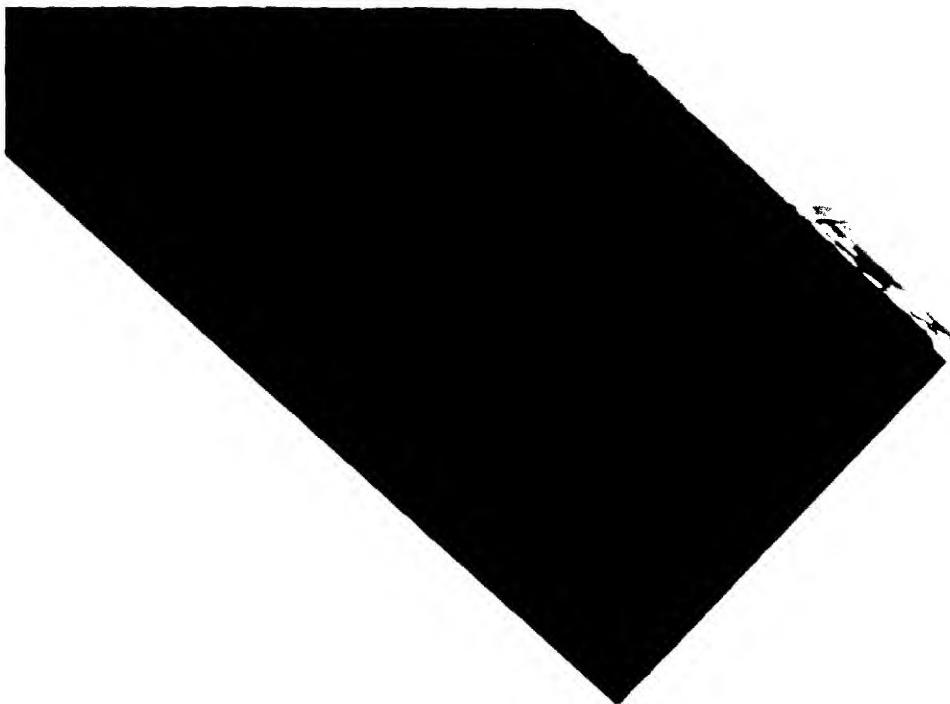


FIG. 6



FIG. 7

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<u>Substrate Materials</u>	<u>Marking Materials</u>	<u>Beam Speed</u>	<u>Power (watts)</u>	<u>Freq (Khz/Cw)</u>
Aluminum	Mixed Metal Oxide	200mm/sec	5 watts	CW
Aluminum	Glass Frit	250mm/sec	5 watts	CW
Brass	Mixed Metal Oxide	200mm/sec	5 watts	CW
Ceramic	Glass Frit	200mm/sec	5 watts	CW
China	Glass Frit	200mm/sec	5 watts	CW
Copper	Mixed Metal Oxide	100mm/sec	5 watts	20 KHz
Auto Safety Glass	Glass Frit	200mm/sec	5 watts	CW
CRT Display Glass	Glass Frit	200mm/sec	5 watts	CW
Flat Panel Display Glass	Glass Frit	200mm/sec	5 watts	CW
Microscope Slide Glass	Glass Frit	200mm/sec	5 watts	CW
Nickel	Mixed Metal Oxide	200mm/sec	5 watts	CW
Nylon™	Mixed Metal Oxides	250mm/sec	5 watts	CW
Porcelain	Glass Frit	200mm/sec	5 watts	CW
PVC	Mixed Organic Pigments	200mm/sec	5 watts	CW
Stainless Steel	Mixed Metal Oxide	200mm/sec	5 watts	CW
Stainless Steel	Glass Frit	300mm/sec	5 watts	CW
Teflon™	Mixed Metal Oxides	200mm/sec	5 watts	CW
Tin	Mixed Metal Oxide	200mm/sec	5 watts	CW
Titanium	Mixed Metal Oxide	200mm/sec	5 watts	CW

FIG. 8

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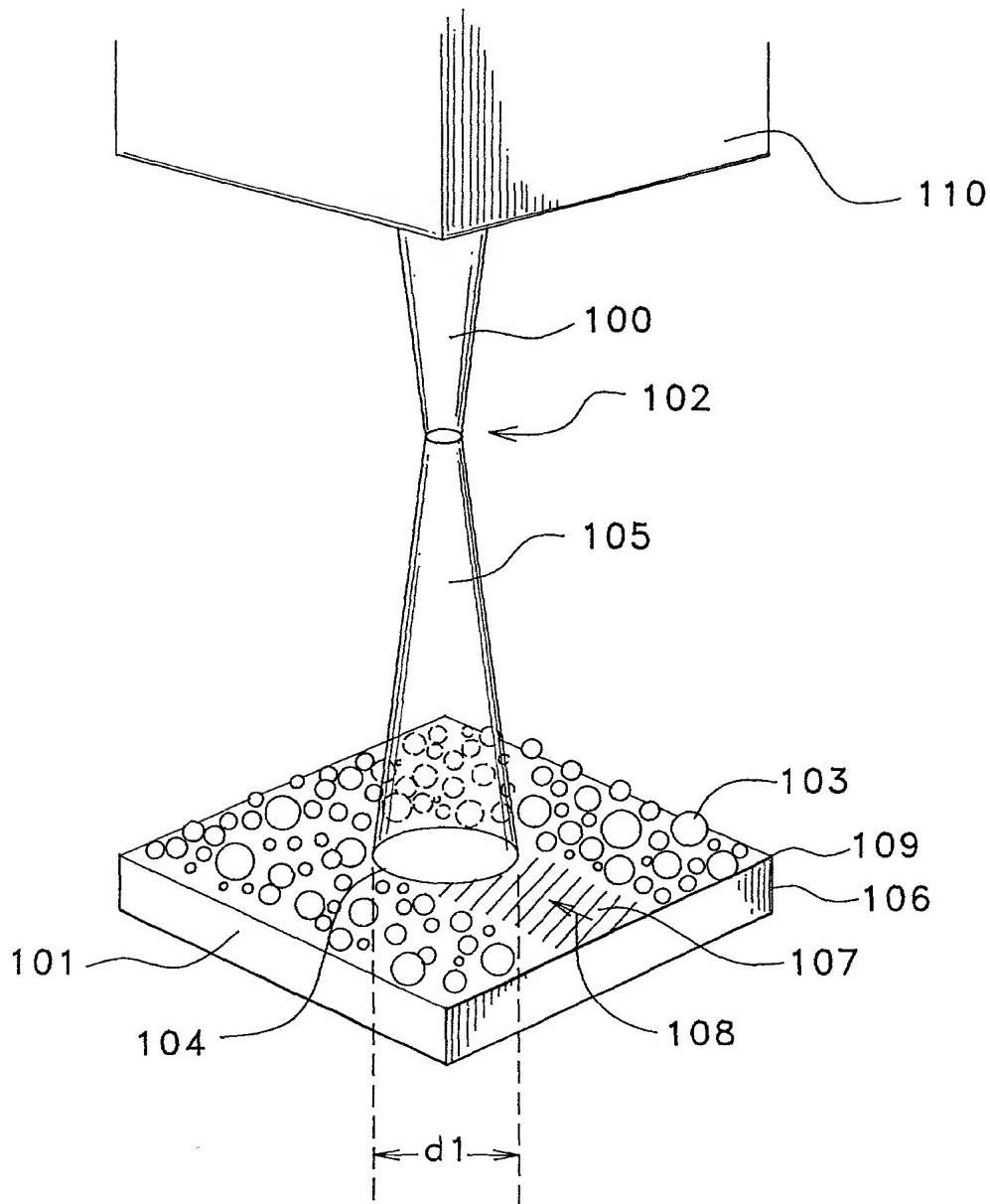


FIG. 9

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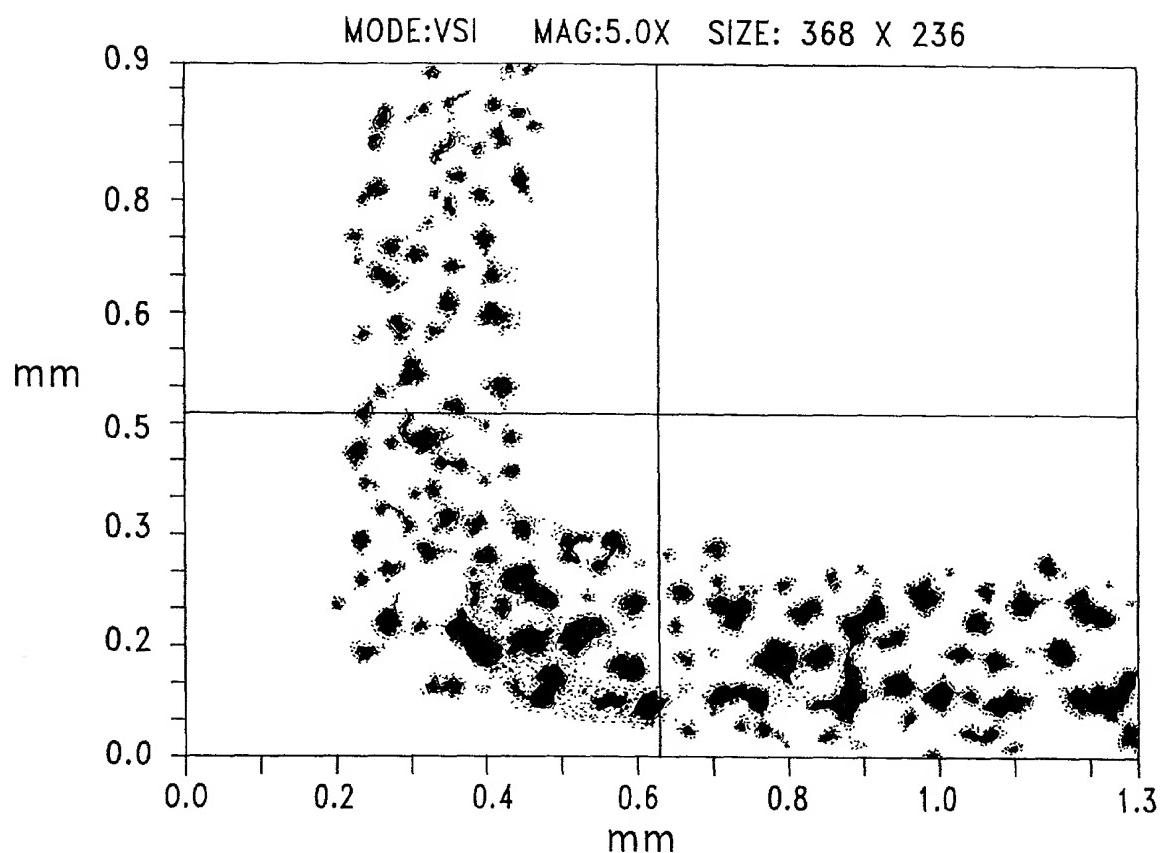


FIG. 10 a

GLASS SLIDE - PORCELAIN/GLASS FRIT

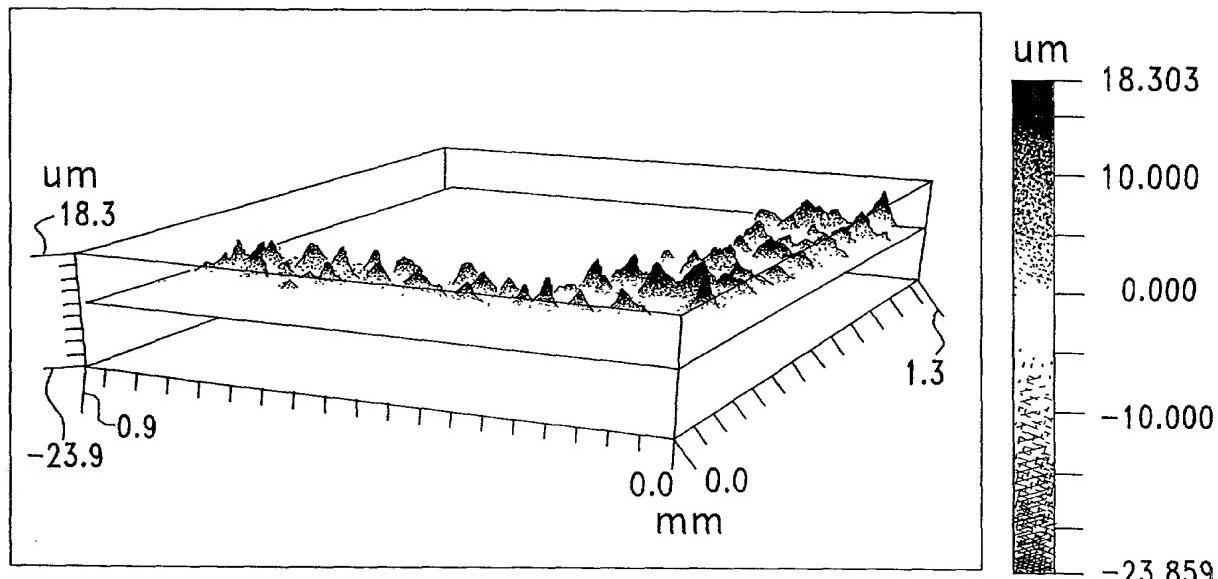


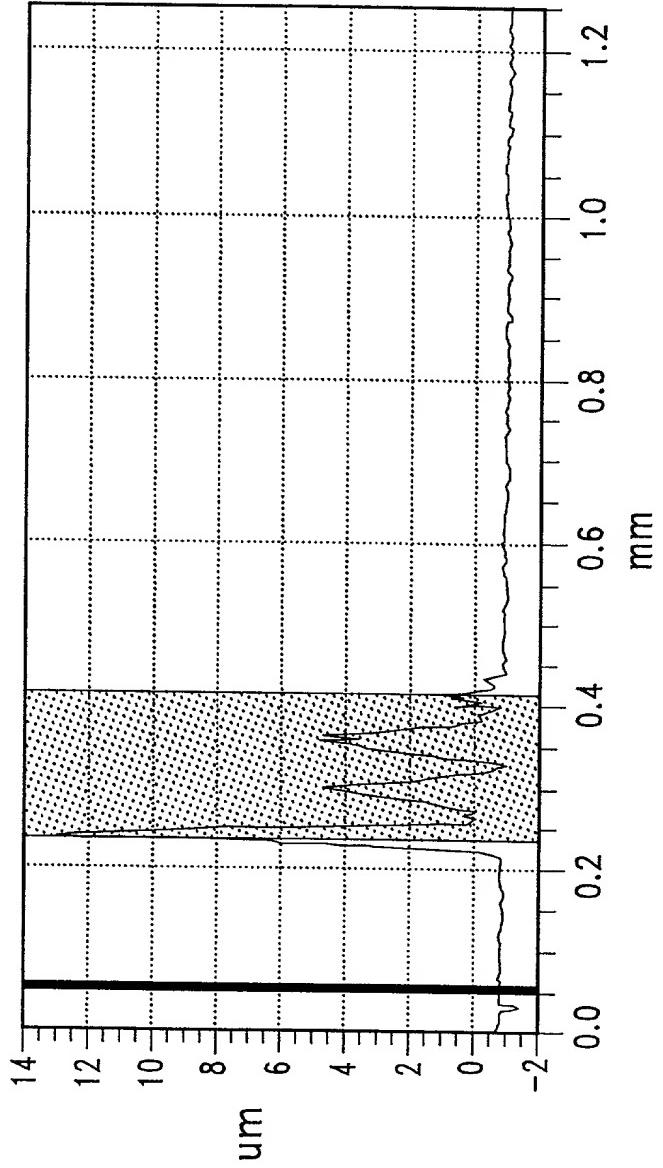
FIG. 10 b

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X-PROFILE/2 PT/RADIAL



Rq: 2.92 um
Ra: 1.97 um
Rt: 14.09 um
Rp: 13.17 um
Rv: -0.92um

L: 0.05 mm -0.83 um Angle: 0.64°
R: 0.33 mm 2.23 um Curve: -14.65 mm
D: 0.27 mm 3.05 um Terms: None
AvgHt: 0.61 um
Area 0.17 um²

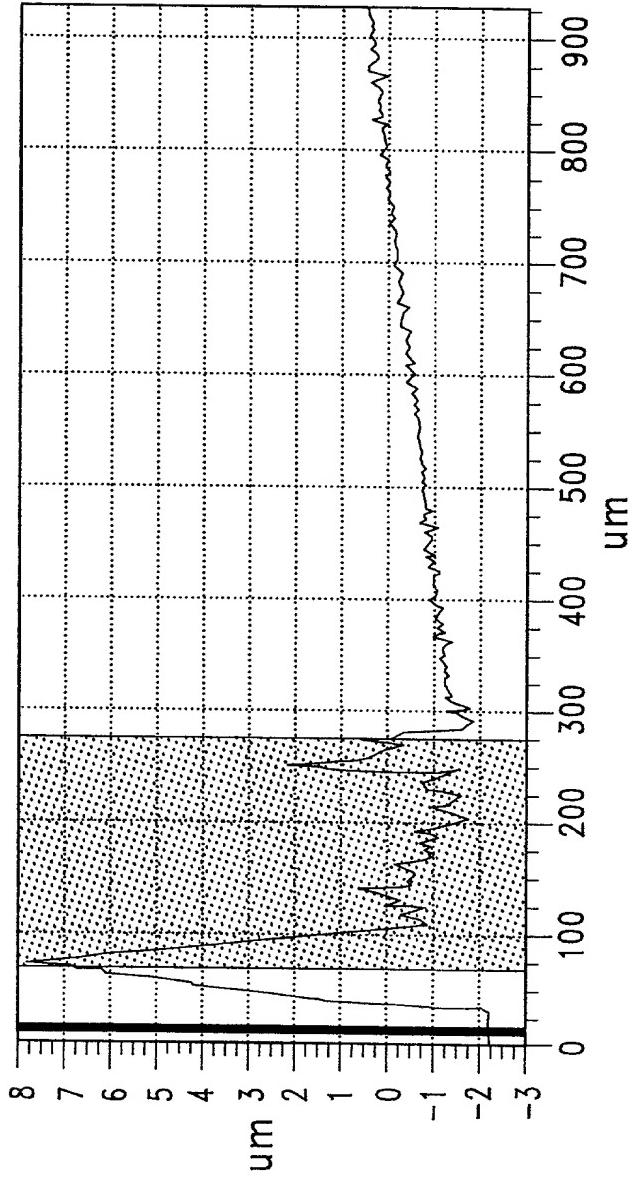
FIG. 10 C

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Y-PROFILE/CIRCULAR



L:	13.93 um	-2.15 um	Angle: 0.98°
R:	170.62 um	0.54 um	Curve: -492.76 um
D:	156.69 um	2.69 um	Terms: None
AvgHt:	1.20 um		
Area:	187.84 um ²		

FIG. 10 d